



Laboratory of industrial research

Art. n. 14 of ministerial decree n. 593 of 8 august 2000

*Ministero dell'istruzione,
dell'Università e della Ricerca*



G.F. S.p.A.

Via T. Edison, 3 • 43045 Rubbiano fraz. Solignano (PR) - Italy • Tel. +39. 0525. 300311 • Fax +39. 0525. 300350

Web: www.gfe.it • E-mail: gfe@gfe.it

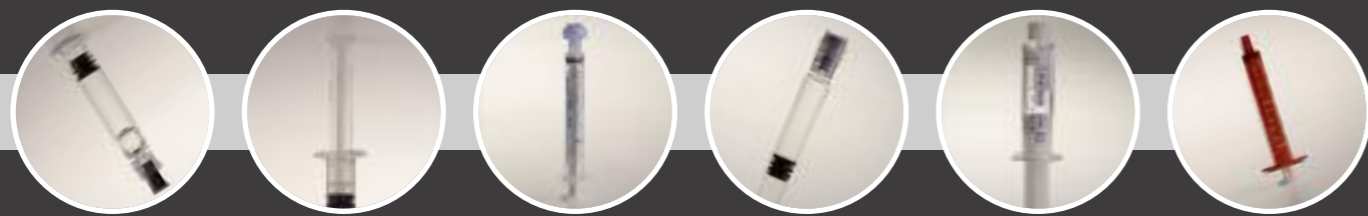
AUTOMATIC INSPECTION SYSTEMS

a&v GS
SERIES



INNOVATIVE TECHNOLOGY AT YOUR SERVICE

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Developed to process syringes filled with sterile products, the A&V GS series of fully automated inspection machines represents the ideal solution to comply with GMP requirements and to ensure that injectable products are essentially free of contamination.

A&V GS machines combine multiple control stations and different lighting sources and techniques with optimal mechanical handling and transport systems. Servo-motor drives are largely used to fine tune the container spinning speeds and the corresponding motion patterns. An optimized design and structure allow easy cleaning of all working surfaces and direct access for maintenance operations. Change-over is rapid and simple thanks to quick-release parts.

Powerful image processing hardware and sophisticated detection algorithms and programs are integrated in an advanced inspection system to enhance detection capabilities and to limit false rejection rates.



"The presence of particulate matter in intravenous injections represents a potentially life-threatening hazard".

The International Pharmacopeia guidelines state that, prior to dispensing, all containers of parenteral preparations must be inspected to the extent possible for the presence of visible foreign and particulate matter in their contents. Also, containers must be perfectly sealed to prevent alteration to their physical properties.

GF S.p.A. manufactures a complete range of optical inspection machines which are designed and built based on a long experience in mechanical handling and control systems with a constant commitment to keeping up with the fast development of visual and optical devices. This allows us to guarantee high performance and consistent detection results.



In the standard configuration of the A&V GS series machines, each container is inspected at least three times for particles. If deemed necessary a fourth station can also be installed.

Only moving particles are detected, while marks on the container surface (like printed information or logos and scratches) are ignored.

Different lighting techniques are used for detecting different particles type.

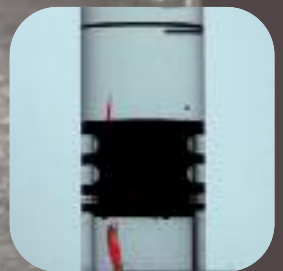
In the same machine, additional stations can be installed to execute a complete cosmetic inspection of the syringes flange, needle tip, plunger, liquid between the ribs, body side walls, etc.



Light particles



Level control



Side wall control



Needle tip control



Flange integrity control



Plunger control

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A & V

A&V GS INSPECTION MACHINE

GS SERIES